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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	CP-2019-01-04-17 **Date: 05-11-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	02-11-18
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	03-11-18

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.75	_
2	Finess by Air permeablity method (m^2/kg,Min)	281.4	225m^2/kg, Min
3	Density (gm/cc)	3.14	_
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2019-01-04-17** **Date: 01-12-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	02-11-18
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	03-11-18
Environmental Conditions during test	:	Temperature: 26˚C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	57.5N/mm^2	Not less than 53 N/mm^2

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2019-01-04-17** **Date: 05-11-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	02-11-18
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	02-11-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	242	242	1.6	98.4	90-100
3	20 mm	5437	5679	37.9	62.1	30-70
4	10 mm	4339	10018	66.8	33.2	10-35
5	4.75 mm	4649	14667	97.8	2.2	0-5
6	Pan	333	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-01-04-17** **Date: 05-11-18**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.3	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	1.49	–
5	Bulk Density(Compacted) (Kg/l)	1.52	–
6	Water Absorption(%)	0.20	–

Abdul. N.D
AE(W)

Assistant Executive Engineer
Kodigehalli Sub Division
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FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-01-04-17** **Date: 05-11-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 02-11-18

Sample Type/ Size : 20mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 02-11-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : **5000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	240	240	4.8	95.2	90-100
3	10 mm	2567	2807	56.1	43.9	25-55
4	4.75 mm	2030	4837	96.7	3.3	0-10
5	Pan	163	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-01-04-17** **Date: 05-11-18**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	9.8	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.3	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	1.5	–
5	Bulk Density(Compacted) (Kg/l)	1.52	–
6	Water Absorption(%)	0.24	–
7	Aggregate crushing Value(%)	22.7	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	24.6	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signature
Quality Manager

Assistant Executive Engineer
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Bangalore - 560 092

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2019-01-04-17** **Date: 05-11-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 02-11-18

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 02-11-18

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	78	78	7.8	92.2	90-100	90-100	90-100	95-100
3	2.36 mm	65	143	14.3	85.7	60-95	75-100	85-100	95-100
4	1.18 mm	244	387	38.7	61.3	30-70	55-90	75-100	90-100
5	600 micron	215	602	60.2	39.8	15-34	35-59	60-79	80-100
6	300 micron	178	780	78.0	22.0	5-20	8-30	12-40	15-50
7	150 micron	141	921	92.1	7.9	0-10	0-10	0-10	0-15
8	Pan	79	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2019-01-04-17

Date: 05-11-18

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.05	–
2	Specific Gravity	2.51	–
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....

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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2019-01-04-17** **Date: 24-11-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 20-11-18

Sample Type /Size : Precast Cover Slab

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 20/11/2018

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	165.51	200.48	1.116	21511	80.9	3.8	3.5	4.4
2	Cover Slab-2	165.49	200.52	1.122	21506	82.3	3.8	3.6	4.4
3	Cover Slab-3	165.50	200.51	1.118	21508	81.5	3.8	3.5	4.4

Assistant Executive Engineer
Bruhat Bangalore Mahanagara Palike

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Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Date: 20/11/2018

Lab ID	:	**CP-2019-01-04-17**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	15-11-18
Customer ID	:	Coping Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M15 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	20/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	13/11/2018	20/11/2018	150.37 X 149.85 X 150.18	22533	**8.803**	284.4	12.6	12.5
2	Coping Concrete	M15	13/11/2018	20/11/2018	149.38 X 149.55 X 150.69	22339	**8.453**	277.3	12.4	
3	Coping Concrete	M15	13/11/2018	20/11/2018	151.23 X 151.92 X 149.62	22974	**8.488**	289.4	12.6	

Abhijit. N.D
AE (Lab)

Assistant Executive Engineer
Kodigehalli Division
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 11/12/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 15-11-18

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 11/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	13/11/2018	11/12/2018	150.17 X 151.36 X 149.67	22729	**8.484**	399.8	17.6	17.4
2	Coping Concrete	M15	13/11/2018	11/12/2018	150.74 X 151.72 X 151.34	22871	**8.793**	396.2	17.3	
3	Coping Concrete	M15	13/11/2018	11/12/2018	149.65 X 149.09 X 151.98	22311	**8.872**	388.3	17.4	

AE (WS)

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 20/11/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 15-11-18

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 20/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	13/11/2018	20/11/2018	150.39 X 149.77 X 150.31	22524	**8.499**	280.3	12.4	12.4
2	Coping Concrete	M15	13/11/2018	20/11/2018	151.00 X 150.53 X 150.25	22730	**8.557**	283.0	12.5	
3	Coping Concrete	M15	13/11/2018	20/11/2018	149.75 X 150.71 X 150.88	22570	**8.797**	278.4	12.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 11/12/2018

Lab ID : **CP-2019-01-04-17**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 15-11-18

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 11/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	13/11/2018	11/12/2018	149.36 X 151.28 X 151.87	22596	**8.195**	403.2	17.8	17.6
2	Coping Concrete	M15	13/11/2018	11/12/2018	150.05 X 150.07 X 149.51	22517	**8.200**	385.1	17.1	
3	Coping Concrete	M15	13/11/2018	11/12/2018	149.72 X 149.94 X 151.06	22449	**8.868**	400.7	17.9	

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Assistant Executive Engineer
Kodigehalli Sub Division
Brahat Bangalore Mahanagara Palike
Bangalore - 560 092

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****End of Report****

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 20/11/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 15-11-18

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 20/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	13/11/2018	20/11/2018	149.62 X 150.20 X 149.34	22473	**8.045**	290.0	12.9	12.8
2	Coping Concrete	M15	13/11/2018	20/11/2018	150.78 X 150.86 X 150.01	22746	**8.400**	291.3	12.8	
3	Coping Concrete	M15	13/11/2018	20/11/2018	151.37 X 149.52 X 150.96	22633	**8.821**	284.1	12.6	

AE (WZ)

Assistant Executive Engineer
Koolis
Central Zone
Bangalore - 560 002

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 11/12/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 15-11-18

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 11/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Coping Concrete	M15	13/11/2018	11/12/2018	151.53 X 150.64 X 149.52	22826	**8.447**	397.5	17.4	17.5
2	Coping Concrete	M15	13/11/2018	11/12/2018	151.59 X 150.62 X 149.48	22833	**8.618**	403.1	17.7	
3	Coping Concrete	M15	13/11/2018	11/12/2018	151.25 X 149.81 X 149.11	22659	**8.185**	397.8	17.6	

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 21/11/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 16-11-18

Customer ID : Cement Concrete Pavement

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	14/11/2018	21/11/2018	150.54 X 151.17 X 151.78	22757	**8.303**	430.6	18.9	18.9
2	Cement Concrete Pavement	M20	14/11/2018	21/11/2018	150.25 X 151.21 X 150.13	22719	**8.931**	429.9	18.9	
3	Cement Concrete Pavement	M20	14/11/2018	21/11/2018	150.88 X 149.86 X 151.98	22610	**8.922**	428.2	18.9	

Asst.Ly. N.D
AE(W1)

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Bangalore - 560 092

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2019-01-04-17** **Date: 12/12/2018**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	16-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	12/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	150.16 X 151.60 X 150.17	22765	**8.875**	538.6	23.7	23.2
2	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	151.18 X 149.02 X 149.79	22528	**8.580**	501.6	22.3	
3	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	149.27 X 150.42 X 151.37	22452	**8.345**	530.5	23.6	

N.D
AE(DA)

Assistant Executive Engineer
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FOR CIVIL Pro.

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Authorized Signatory
Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 21/11/2018

Lab ID	:	**CP-2019-01-04-17**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	16-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	21/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	14/11/2018	21/11/2018	149.87 X 151.05 X 151.94	22639	**8.303**	419.3	18.5	18.6
2	Cement Concrete Pavement	M20	14/11/2018	21/11/2018	150.53 X 151.53 X 149.63	22810	**8.931**	421.9	18.5	
3	Cement Concrete Pavement	M20	14/11/2018	21/11/2018	151.70 X 151.75 X 149.23	23020	**8.922**	432.6	18.8	

AE(WO)

Assistant Executive Engineer
Kodigehalli Maharajpura Police
Bruhat Bangalore Mahanagara Palike
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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 12/12/2018

Lab ID	:	**CP-2019-01-04-17**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	16-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	12/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	150.58 X 151.42 X 151.37	22801	**8.875**	541.2	23.7	23.1
2	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	149.76 X 149.81 X 149.41	22435	**8.580**	502.1	22.4	
3	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	149.56 X 151.93 X 151.80	22723	**8.345**	525.7	23.1	

AE(WP)

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	CP-2019-01-04-17 Date: 12/12/2018
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	16-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	12/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	150.08 X 149.41 X 151.39	22423	**8.875**	526.5	23.5	23.1
2	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	151.84 X 149.33 X 150.32	22674	**8.580**	510.9	22.5	
3	Cement Concrete Pavement	M20	14/11/2018	12/12/2018	149.23 X 149.15 X 150.72	22257	**8.345**	520.4	23.4	

Assistant Executive Engineer
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2019-01-04-17** **Date: 22/11/2018**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	17-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	22/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	150.30 X 151.33 X 149.01	22745	**8.303**	423.7	18.6	18.5
2	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	151.58 X 149.67 X 150.93	22686	**8.931**	411.3	18.1	
3	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	149.22 X 151.79 X 149.95	22651	**8.922**	424.3	18.7	

FOR CIVIL Pro.

R KARTHIK RECHAN
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Quality Manager

Assistant Executive Engineer
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2019-01-04-17** **Date: 13/12/2018**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	17-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	13/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	151.90 X 149.73 X 149.13	22744	**8.875**	541.0	23.8	23.2
2	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	149.36 X 149.85 X 151.13	22382	**8.580**	507.0	22.7	
3	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	151.04 X 150.96 X 151.91	22801	**8.345**	529.8	23.2	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 22/11/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 17-11-18

Customer ID : Cement Concrete Pavement

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 22/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	150.66 X 150.46 X 151.94	22668	**8.303**	415.3	18.3	18.3
2	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	151.85 X 149.37 X 150.73	22681	**8.931**	421.2	18.6	
3	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	151.71 X 151.46 X 151.55	22977	**8.922**	415.0	18.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 13/12/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 17-11-18

Customer ID : Cement Concrete Pavement

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	150.41 X 151.05 X 151.44	22720	**8.875**	531.2	23.4	23.2
2	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	149.80 X 151.01 X 149.74	22621	**8.580**	513.1	22.7	
3	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	149.29 X 149.26 X 151.02	22283	**8.345**	524.4	23.5	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-04-17** **Date: 22/11/2018**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer's Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 17-11-18

Customer ID : Cement Concrete Pavement

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 22/11/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	150.42 X 151.91 X 151.62	22850	**8.303**	416.8	18.2	18.6
2	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	151.94 X 149.85 X 149.18	22768	**8.931**	426.9	18.8	
3	Cement Concrete Pavement	M20	15/11/2018	22/11/2018	150.14 X 150.05 X 151.44	22529	**8.922**	426.6	18.9	

Abhijit N.D
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2019-01-04-17** **Date: 13/12/2018**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	17-11-18
Customer ID	:	Cement Concrete Pavement
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	13/12/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	150.69 X 151.99 X 149.53	22904	**8.875**	530.9	23.2	23.1
2	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	151.51 X 151.63 X 151.10	22974	**8.580**	512.6	22.3	
3	Cement Concrete Pavement	M20	15/11/2018	13/12/2018	151.04 X 149.69 X 149.80	22609	**8.345**	538.2	23.8	

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2019-01-04-17** **Date: 05-12-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 03-12-18

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 03-12-18

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2019-01-04-17** **Date: 05-12-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	03-12-18
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	03-12-18

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2019-01-04-17** **Date: 05-12-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	03-12-18
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	03-12-18

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2019-01-04-17** **Date: 11-12-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer's Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	10-12-18
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	10-12-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73 2013
1	Penetration at 25°C , in 1/10th mm	**62**	60 to 70
2	Softening Point, °C	**51.6**	Min. 40°C
3	Ductility, cm	**96**	Min. 75cm
4	Flash point, °C	**244**	Min. 220°C
	Fire point, °C	**274**	

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2019-01-04-17** **Date: 19-12-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 17-12-18

Type of Mix : BC-Plant (Bituminous Concrete)

Date of test : 17-12-18

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

Asstp Ly. N.D
AE (Ly)

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : **CP-RW-2019-01-04-17** **Date: 20-12-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 17-12-18

Type of Mix : BC(Bitumenous Concrete)

Date of test : 17-12-18

Type of Binder : 60/70

% of Binder Used : 5.0%

Weight of Aggregate : 200.0 gm

Weight of Binder : 10.0 gm

Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

ab ID	:	**CP-RW-2019-01-04-17** **Date: 20-12-18**
oject Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
me of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
stomer Reference	:	BBMP/EE/BTP/WO/159/2018-19
te of Receipt	:	17-12-18
pe of Mix	:	BC (Bituminous Concrete)
te of test	:	17-12-18

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quallity Manager

Assistant Executive Engineer
Kodigehalli Sub Division
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CIVIL PRO BANGALORE Sig..... Date.....

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2019-01-04-17** **Date: 20-12-18**
Project Name	:	Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura
Agency	:	Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.
Customer Reference	:	BBMP/EE/BTP/WO/159/2018-19
Date of Receipt	:	17-12-18
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	17-12-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : **CP-RW-2019-01-04-17** **Date: 24-12-18**

Project Name : Package-4, includes 4 Works of Rs.195.00 Lakhs 1)Improvements to Roads and Drains Near Hebbal Shanimahatma Temple in Hebbal in Ward No.07 Bytarayanapura. 2)Improvements to Roads and Drains Amruthalli Gramatana (Pending Work) and Surrounding Areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains in Sanjeevinagara, Byatarayanapura and Kempapura in Ward No.07 Byatarayanapura. 4)Improvements to Drains Hoysala Apartment Towards Byatarayanapura Village in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains Amruthali Gramatana Pending Works and Surrounding Areas in Ward No.07 Byatarayanapura

Agency : Sri.Abhijit A No. 09, Gurushree Nilaya, 5th Cross, 80 Feet Road, Padmanabhanagara, Bangalore-560070.

Customer Reference : BBMP/EE/BTP/WO/159/2018-19

Date of Receipt : 21-12-18

Type of Mix : BC (Bituminous Concrete)

Date of test : 21-12-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	472	473
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.60	5.40
4	Average percentage	%	5.5	

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

Lab ID : **CP-RW-2019-01-04-17** **Date: 24-12-18**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.7	62.3	53-71
2.36	88	266	56.4	43.6	42-58
1.18	29	295	62.5	37.5	34-48
0.6	11	306	64.8	35.2	26-38
0.3	46	352	74.6	25.4	18-28
0.15	45	397	84.1	15.9	12-20
0.075	55	452	95.8	4.2	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 473

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.6	62.4	53-71
2.36	88	266	56.2	43.8	42-58
1.18	29	295	62.4	37.6	34-48
0.6	11	306	64.7	35.3	26-38
0.3	46	352	74.4	25.6	18-28
0.15	45	397	83.9	16.1	12-20
0.075	55	452	95.6	4.4	4-10

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